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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Ravishankar Sankaranarayanan

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06/12/2006

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EXAMINER

CHEN, SHIH CHAO

ART UNIT

PAPER NUMBER

2821

DATE MAILED: 06/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/757,987

**Applicant(s)**SANKARANARAYANAN,  
RAVISHANKAR**Examiner**

Shih-Chao Chen

**Art Unit**

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 April 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 1-5, 10 and 18 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13-17 and 19-26 is/are allowed.
- 6) ☒ Claim(s) 6-9 and 12 is/are rejected.
- 7) ☒ Claim(s) 11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 November 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Objections*

1. Claim 9 is objected to because of the following informalities: in line 1, "9(Original)." should be changed to --9(Canceled).-- because in **REMARKS**, Claim 9 is canceled. Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 6-9 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Mizuno et al. (U.S. Patent No. 5,977,904).

Regarding claim 6, Mizuno et al. teaches in figures 1-6 a base station comprising: an antenna [2] containing a plurality of antenna elements [12a-12f] and a lens [8], wherein the plurality of antenna elements generate a beam (See FIG. 5) and the lens collimates the beam in a desired direction (See FIG. 5) such that the base station sends signals in the desired direction; a transmitter [10] receiving a baseband signal and generating a broadband signal in a frequency range suitable for transmission by the antenna [2]; and a divider [20a, 20b] receiving the broadband signal and generating an input signal (See FIG. 2) for each of the plurality of antenna elements [12a-12f] .

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Regarding claim 7, Mizuno et al. teaches in figures 1-6 the base station of claim 6, wherein the desired direction comprises a direction in which a high density of wireless users are expected to be present.

Regarding claim 8, Mizuno et al. teaches in figures 1-6 the base station of claim 7, wherein the direction is along a road.

Regarding claim 9, Mizuno et al. teaches in figures 1-6 the base station of claim 6, wherein each of the plurality of lens [8] is provided in a corresponding direction.

Regarding claim 12, Mizuno et al. teaches in figures 1-6 the base station of claim 6, further comprising: a summing block (See FIG. 2) receiving a plurality of electrical signals from the antenna elements [12a-12f] and generating a broadband signal; and a receiver block [10] generating a baseband signal from the broadband signal.

***Allowable Subject Matter***

4. Claims 13-17 and 19-26 are allowed.
5. Claim 11 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
6. The following is a statement of reasons for the indication of allowable subject matter:

The primary reason for the allowance of claims 13-17 is the inclusion of the method step of determining a shape of the lens is determined from the characterized collimation pattern and the CRP. It is this step found in each of the claims, as it is

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claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

The primary reason for the allowance of claims 19-21 is the inclusion of the limitation of a shape of the lens is determined using a composite radiation pattern of the antenna and the desired collimation pattern. It is this limitation found in each of the claims, as it is claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

The primary reason for the allowance of claims 22-24 is the inclusion of the method step of determining the shape of the lens using the characterized collimation pattern and the composite radiation pattern. It is this step found in each of the claims, as it is claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

The primary reason for the allowance of claims 25-26 is the inclusion of the limitation of the lens having a shape that is determined by characterizing a desired collimation pattern for the antenna and a composite radiation pattern of a plurality of antenna elements. It is this limitation found in each of the claims, as it is claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

### ***Response to Arguments***

7. Applicant's arguments filed April 3, 2006 have been fully considered but they are not persuasive.

Applicant argues that the Examiner has indicated that claim 10 is allowable; however, the Examiner has also issued a rejection of claim 10 without any citation to element in the cited reference. This argument is not deemed to be persuasive because the typing error, the indication allowable dependent claim is claim 11 (See Office action filed on 01/12/2006).

### ***Conclusion***

**8. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

### ***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shih-Chao Chen whose telephone number is (571) 272-1819. The examiner can normally be reached on Monday-Thursday from 7 AM to 5:30 PM, Fri. off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy P. Callahan can be reached on (571) 272-1740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Shih-Chao Chen  
Primary Examiner  
Art Unit 2821

*Shih-Chao Chen*  
**SHIH-CHAO CHEN**  
**PRIMARY EXAMINER**

SXC  
May 31, 2006